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***File 669, TRADEMARKSCAN(R) - Japan
***File 678, TRADEMARKSCAN(R) - Norway
                    ***
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***File 321, PLASPEC now known as Plastic Properties Database
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***File 388, PEDS: Defense Program Summaries
***File 588, DMS-FI Contract Awards

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? b 155 biosci medicine 399

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[File 136] **BioEngineering Abstracts** 1966-2007/Jan

**File 136: This file is closed.*

[File 143] **Biol. & Agric. Index** 1983-2009/Apr

[File 144] **Pascal** 1973-2009/Apr W4

[File 154] **MEDLINE(R)** 1990-2009/May 04

[File 164] **Allied & Complementary Medicine** 1984-2009/May

[File 172] **EMBASE Alert** 2009/May 05

[File 185] **Zoological Record Online(R)** 1864-2009/Apr

[File 357] **Derwent Biotech Res.** _1982-2009/Mar W4

[File 369] **New Scientist** 1994-2009/Apr W4

[File 370] **Science** 1996-1999/Jul W3

**File 370: This file is closed (no updates). Use File 47 for more current information.*

[File 391] **Beilstein Database - Reactions** 2008/Q2

[File 434] **SciSearch(R) Cited Ref Sci** 1974-1989/Dec

[File 457] **THE LANCET 1992-2009/APR W4**

[File 467] **ExtraMED(tm)** 2000/Dec

[File 138] **Physical Education Index** 1990-2009/Jun

[File 149] **TGG Health&Wellness DB(SM)** 1976-2009/Mar W5

```
?  s au=((Ohmiya y?) or (ohmiya y.?) or (ohmiya, y?)) and luciferase

          921   AU=OHMIYA Y?

          241   AU=OHMIYA Y.?

          516   AU=OHMIYA, Y?

       179417   LUCIFERASE

S1        444   S AU=((OHMIYA Y?) OR (OHMIYA Y.?) OR (OHMIYA, Y?)) AND LUCIFERASE


?  s s1 and (vargula or hilgendorfi)

          444   S1

          618   VARGULA

          711   HILGENDORFI

S2         61   S S1 AND (VARGULA OR HILGENDORFI)


?  rd

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S3         22   RD  (UNIQUE ITEMS)
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?  s s3 and (fusion of chimer? or heterologous)
           22   S3
            0   FUSION OF CHIMER?
       343658   HETEROLOGOUS
S4          0   S S3 AND (FUSION OF CHIMER? OR HETEROLOGOUS)

?  s s3 and fluorescent
           22   S3
      1281397   FLUORESCENT
S5          5   S S3 AND FLUORESCENT

?  t s5/full/all
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5/9/1 (Item 1 from file: 155)
Fulltext available through: STIC Full Text Retrieval Options
MEDLINE(R)

15951543 **PMID:** 15158481

Monitoring for dynamic biological processing by intramolecular bioluminescence resonance energy transfer system using secreted luciferase.

Otsuji Tomomi; Okuda-Ashitaka Emiko; Kojima Satoshi; Akiyama Hidefumi; Ito Seiji; **Ohmiya Yoshihiro**
Special Division for Human Life Technology, Cell Dynamics Research Group, National Institute of AIST, Ikeda 563-8577, Japan.

Analytical biochemistry (United States) Jun 15 2004 , 329 (2) p230-7 , **ISSN:** 0003-2697--Print **Journal Code:** 0370535
Publishing Model Print
Document type: Journal Article; Research Support, Non-U.S. Gov't
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Subfile: INDEX MEDICUS

Proteolytic processing plays crucial roles in physiological and pathophysiological cellular functions such as peptide generation, cell cycle, and apoptosis. We developed a novel biophysical bioluminescence resonance energy transfer (BRET) system between a secreted **Vargula luciferase** (Vluc) and an enhanced yellow **fluorescent** protein (EYFP) for visualization of cell biological processes. The bioluminescence spectrum of the fusion protein (Vluc-EYFP) is bimodal (lambdamax = 460 nm (Vluc) and 525nm (EYFP)), indicating that the excited-state energy of Vluc transfers to EYFP (in short, BRET). The BRET signal can be measured in the culture medium and pursue quantitative production of two neuropeptides, nocistatin (NST) and nociceptin/orphanin FQ (N/OFQ) in living cells. NST and N/OFQ are located in tandem on the same precursor, but NST exhibits antagonistic action against N/OFQ-induced central functions. Insertion of a portion of the NST-N/OFQ precursor (Glu-Gln-Lys-Gln-Leu-Gln-Lys-Arg-Phe-Gly-Gly-Phe-Tyr-Gly) in Vluc-EYFP makes the fusion protein cleavable at Lys-Arg in NG108-15 cells, and proprotein convertase 1 enhances this digestion. The change in BRET signals quantifies the processing of the fusion protein.

Our novel intramolecular BRET system using a secreted **luciferase** is useful for investigating peptide processing in living cells.
Descriptors: *Luciferases; *Peptide Biosynthesis--physiology--PH; *Staining and Labeling --methods--MT ; Bacterial Proteins; Luminescent Proteins; Microscopy, Confocal; Spectrophotometry
CAS Registry No.: 0 (Bacterial Proteins); 0 (Luminescent Proteins); 0 (yellow fluorescent protein, Bacteria)
Enzyme No.: EC 1.13.12.- (Luciferases)
Record Date Created: 20040525
Record Date Completed: 20050111

5/9/2 (Item 1 from file: 34)
Fulltext available through: STIC Full Text Retrieval Options

14416513 **Genuine Article#:** 969UO **Number of References:** 95
Basic and applied aspects of color tuning of bioluminescence systems

Author: Ohmiya Y (REPRINT)
Corporate Source: PRESTO,Japan Sci & Technol Agcy, Natl Inst Adm Ind Sci & Technol, Res Inst Cell Engn,L,1-8-31 Midorigaoka/Ikeda/Osaka 5638577/Japan/ (REPRINT); PRESTO,Japan Sci & Technol Agcy, Natl Inst Adm Ind Sci & Technol, Res Inst Cell Engn,L,Ikeda/Osaka 5638577/Japan/ (y-ohmiya@aist.go.jp)
Journal: JAPANESE JOURNAL OF APPLIED PHYSICS PART 1-REGULAR PAPERS BRIEF COMMUNICATIONS & REVIEW PAPERS , 2005 , V 44 , N9A,1 (SEP) , P 6368-6379
ISSN: 0021-4922 **Publication date:** 20050900
Publisher: INST PURE APPLIED PHYSICS , 5F YUSHIMA BLDG, 2-31-22 YUSHIMA, BUNKYO-KU, TOKYO, 113-0034, JAPAN
Language: English **Document Type:** REVIEW
Geographic Location: Japan
Journal Subject Category: PHYSICS, APPLIED
Abstract: V. Viviani et al. [Biochemistry 38 (1999) 8271] were the first to succeed in cloning the red-emitting enzyme from the South American railroad worm, which is the only bioluminescent organism known to emit a red-colored light. The application of red bioluminescence has been our goal because the transmittance of longer-wavelength light is superior to that of the other colors for visualization of biological functions in living cells. Now, different color luciferases, which emit with wavelength maxima ranging from 400 to 630 nm, are available and are being used. For example, based on different color luciferases, Nakajima et al. developed a tricolor reporter in vitro assay system based on these different color luciferases in which the expression of three genes can be monitored simultaneously. On the other hand, bioluminescence resonance energy transfer (BRET) is a natural phenomenon caused by the intermolecular interaction between a bioluminescent protein and a fluorophore on a second protein, resulting in the light from the bioluminescence reaction having the spectrum of the fluorophore. Otsuji et al. [Anal. Biochem. 329 (2004) 230] showed that the change in the efficiency of energy transfer in intramolecular BRET can quantify cellular functions in living cells. In this review, I introduce the basic mechanisms of color tuning in bioluminescent systems and new applications based on color tuning in the life sciences.
Descriptors--Author Keywords: bioluminescence ; BRET ; cell ; color tuning ; energy transfer ; firefly ; **luciferase ;** luciferin ; photoprotein ; reporter assay
Identifiers-- KeyWord Plus(R): GREEN-**FLUORESCENT** PROTEIN; **VARGULA** -HILGENDORFII **LUCIFERASE**; PHRIXOTHRIX RAILROAD-WORMS; MONITORING GENE-EXPRESSION; SITE-

DIRECTED MUTAGENESIS; HAMSTER OVARY CELLS; FIREFLY **LUCIFERASE**; ENERGY-TRANSFER; DINOFLAGELLATE LUCIFERIN; LATIA-NERITOIDES

Cited References:

ANGERS S, 2000, V97, P3684, P NATL ACAD SCI USA
BAE YM, 1994, V1219, P449, BBA-GENE STRUCT EXPR
BAUBET V, 2000, V97, P7260, P NATL ACAD SCI USA
BIGGLEY WH, 1967, V50, P1681, J GEN PHYSIOL
BOWDEN BJ, 1950, V99, P373, BIOL BULL
BRANCHINI BR, 1999, V38, P13223, BIOCHEMISTRY-US
BRANCHINI BR, 1998, V37, P15311, BIOCHEMISTRY-US
BRANHAM MA, 2003, V19, P1, CLADISTICS
BRANCHINI BR, 2003, V42, P10429, BIOCHEMISTRY-US
BRANCHINI BR, 2004, V43, P7255, BIOCHEMISTRY-US
BRONSTEIN I, 1994, V219, P169, ANAL BIOCHEM
CHALFIE M, 1994, V263, P802, SCIENCE
CHARBONNEAU H, 1985, V24, P6762, BIOCHEMISTRY-US
CODY CW, 1993, V32, P1212, BIOCHEMISTRY-US
COLEPICOLO NP, 1986, V16, P803, INSECT BIOCHEM
CONTI E, 1996, V4, P287, STRUCTURE
DELUCA M, 1969, V8, P160, BIOCHEM
DUNLAP JC, 1981, V20, P983, BIOCHEMISTRY-US
DUNLAP JC, 1981, V135, P273, FEBS LETT
FOGEL M, 1971, V142, P310, ARCH BIOCHEM BIOPHYS
FRACHEBOUD MG, 1969, P3951, TETRAHEDRON LETT
GREER LF, 2002, V17, P43, LUMINESCENCE
GRENTZMANN G, 1998, V4, P479, RNA
HARVEY EN, 1952, P1, BIOLUMINESCENCE
HASTINGS JW, 1996, V173, P5, GENE
HASTINGS JW, 1993, V45, P21, NAV RES REV
HASTINGS JW, 1983, V19, P5, J MOL EVOL
HASTINGS JW, 1991, P131, BIOLUMINESCENCE NEUR
HEIM R, 1994, V91, P12501, P NATL ACAD SCI USA
HERRING PJ, 1978, P1, BIOLUMINESCENCE ACTI
INOUYE S, 1992, V201, P114, ANAL BIOCHEM
INOUYE S, 1994, V341, P277, FEBS LETT
INOUYE S, 1992, V89, P9584, P NATL ACAD SCI USA
INOUYE S, 1985, V82, P3154, P NATL ACAD SCI USA
JOHNSON FH, 1978, V57, P271, METHOD ENZYMOL
KAJIYAMA N, 1991, V4, P691, PROTEIN ENG
KITAYAMA A, 2003, V77, P333, PHOTOCHEM PHOTOBIOL
KOJIMA S, UNPUB
LEE J, 1970, V11, P247, PHOTOCHEM PHOTOBIOL
LI LM, 1997, V94, P8954, P NATL ACAD SCI USA
MAMAEV SV, 1996, V118, P7243, J AM CHEM SOC
MCCAPRA F, 1994, P387, BIOLUMINESCENCE CHEM
MICHIHATA T, UNPUB
MIYAWAKI A, 1997, V388, P882, NATURE
MONTERO M, 1995, V14, P5467, EMBO J
MORIN JG, 1971, V77, P313, J CELL PHYSL

MORISHITA H, 2002, V75, P311, PHOTOCHEM PHOTOBIOL
MORIN JG, 1991, P1, BIOLUMINESCENT DISPL
NAKAJIMA Y, 2004, V565, P122, FEBS LETT
NAKAJIMA Y, 2004, V68, P948, BIOSCI BIOTECH BIOCH
NAKAMURA H, 1989, V111, P7607, J AM CHEM SOC
NAKAJIMA Y, 2005, V68, P891, BIOTECHNIQUES
NAYLOR LH, 1999, V58, P749, BIOCHEM PHARMACOL
NIWA H, 1996, V93, P13617, P NATL ACAD SCI USA
OGAWA H, 1995, V92, P11899, P NATL ACAD SCI USA
OHMIYA Y, 1992, V301, P197, FEBS LETT
OHMIYA Y, 2000, V47, P31, SCI REP YOKOSUKA CIT
OHMIYA Y, 2004, V76, P5, SEIKAGAKU
OHMIYA Y, 2005, V78, P1197, B CHEM SOC JPN
OHMIYA Y, 1996, V384, P83, FEBS LETT
OTSUJI T, 2004, V329, P230, ANAL BIOCHEM
PRASHER DC, 1992, V111, P229, GENE
ROSEMARIE K, 1998, V34, P167, J PHYCOL
SANTOS DA, 2003, V338, P225, NEUROSCI LETT
SELIGER HH, 1964, V52, P75, P NATL ACAD SCI USA
SELIGER HH, 1960, V88, P136, ARCH BIOCHEM BIOPHYS
SHIMOMURA O, 1963, V62, P1, J CELL COMP PHYSIOL
SHIMOMURA O, 1986, V234, P271, BIOCHEM J
SHIMOMURA O, 1970, V12, P291, PHOTOCHEM PHOTOBIOL
SHIMOMURA O, 1975, V256, P236, NATURE
SHIMOMURA O, 1979, V104, P220, FEBS LETT
SHIMOMURA O, 1973, P2963, TETRAHEDRON LETT
SHIMOMURA O, 1968, V7, P1734, BIOCHEMISTRY-US
SHIMOMURA O, 1968, V7, P2574, BIOCHEMISTRY-US
SHIMOMURA O, 1962, V59, P223, J CELL COMP PHYSIOL
SHIMOMURA O, 1972, V69, P2086, P NATL ACAD SCI USA
SHIMOMURA O, 1966, P391, BIOLUMINESCENCE PROG
SUZUKI C, 2005, V344, P61, GENE
TANAHASHI Y, 2001, V289, P260, ANAL BIOCHEM
THOMPSON EM, 1990, V96, P257, GENE
THOMPSON EM, 1989, V86, P6567, P NATL ACAD SCI USA
TOPALOV G, 2001, V40, P3892, ANGEW CHEM INT EDIT
VENKATESWARAN K, 2003, V52, P367, J MICROBIOL METH
VIVIANI VR, 1995, V62, P490, PHOTOCHEM PHOTOBIOL
VIVIANI VR, 2002, V59, P1833, CELL MOL LIFE SCI
VIVIANI VR, 1999, V38, P8271, BIOCHEMISTRY-US
VIVIANI VR, 1993, V58, P615, PHOTOCHEM PHOTOBIOL
VIVIANI V, 2001, V280, P1286, BIOCHEM BIOPH RES CO
WARD WW, 1979, V254, P781, J BIOL CHEM
WHITE EH, 1975, V97, P1243, J AM CHEM SOC
WILSON T, 1998, V14, P197, ANNU REV CELL DEV BI
WOOD KV, 1995, V62, P662, PHOTOCHEM PHOTOBIOL
WOOD KV, 1990, V5, P107, J BIOLUM CHEMILUM
WU C, 2002, V44, P1263, TETRAHEDRON LETT

XU D, 1999, V96, P151, P NATL ACAD SCI USA

5/9/3 (Item 1 from file: 357)
Derwent Biotech Res.

0338494 **DBA Accession No.:** 2004-10786 **PATENT**
Chimeric secretory or membrane-bound protein containing an energy generating protein and an energy accepting protein for use as a reporter of gene expression vector-mediated chimeric gene transfer and expression in host cell for recombinant protein production and drug screening

Author: OHMIYA Y; ASHITAKA E; ITO S
Patent Assignee: NAT INST ADVANCED IND SCI and TECHNOLOGY 2004
Patent Number: WO 200422600 **Patent Date:** 20040318

WPI Accession No.: 2004-248450 (200423)
Priority Application Number: JP 2002357407 **Application Date:** 20021210
National Application Number: WO 2003JP11285 **Application Date:** 20030904
Language: Japanese
Abstract: DERWENT ABSTRACT: NOVELTY - Secretory or membrane-bound chimeric proteins are new, containing an energy generating protein bound to an energy accepting protein, in which energy transfer between the generating and accepting proteins can take place. DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for (1) polynucleotides encoding the chimeric proteins, and their complementary strands; (2) expression vectors containing the polynucleotides; (3) hosts transformed by the vectors; (4) method for preparation of the chimeric proteins, by culture of the transformed hosts; (5) method for assay of energy transfer within the chimeric proteins (either dissolved in medium or bound to cell membrane), using the transformed hosts; and (6) method for screening compounds regulating the gene expression of the chimeric protein within the cell. BIOTECHNOLOGY - Preferred proteins: The chimeric protein has the form (secretory generating protein)-(accepting protein), (secretory accepting protein)-(generating protein), (membrane bound generating protein)-(accepting protein), (membrane bound accepting protein)-(generating protein), (signal peptide)-(generating protein)-(accepting protein), or (signal peptide)-(accepting protein)-(generating protein), and a monitoring peptide (which interacts with a specific substance such as a protease or sugar to modify the energy transfer) may be interpolated between the generating and accepting proteins. The energy-generating protein may be a light-emitting protein such as **luciferase**, and the energy-accepting protein may be a chromoprotein or **fluorescent** protein such as GFP, YFP, BFP, CFP, DsRED or RFP. USE - As a reporter for gene expression within the cell, for example to monitor the effect within the cell of antidiabetic or antiinflammatory drugs. EXAMPLE - A vector (pEF-BOS-Vluc-EYFP) is constructed based on pEF-BOS (Mizushima, Nucleic Acids Res. (18) 5322) and containing genes encoding **Vargula** hilgendorfii **luciferase** (Vluc) (as energy generating protein) and enhanced yellow **fluorescent** protein (EYFP) (as energy accepting protein), joined via a BamHI-cleavable linker. This is used to transform COS7 cells. The transformant is cultured and the chimeric protein isolated from the medium (see drawing for its spectrum). The vector is BamHI cleaved and a sequence inserted encoding a monitoring peptide (sequence given), then religated. Chimeric peptide obtained from culture of COS7 cells transformed with this modified vector has a second peak in the emission spectrum (at about 530nm) which is removed by modification of the three-dimensional structure of the monitoring peptide (e.g. by binding to a sugar molecule). (57 pages)
Descriptors: recombinant chimeric secretory protein, membrane-bound protein prep., plasmid-mediated green **fluorescent** protein, yellow **fluorescent** protein, BFP, CFP, DsRED, red **fluorescent** protein, **Vargula** hilgendorfii **luciferase** reporter gene transfer, expression in COS-7 cell, appl. antidiabetic, antiinflammatory drug screening fluorescence enzyme cell culture kidney animal monkey mammal (23, 21)

Section: THERAPEUTICS-Protein Therapeutics-GENETIC TECHNIQUES and APPLICATIONS-Gene Expression Techniques and Analysis; BIOMANUFACTURING and BIOCATALYSIS-Animal/Plant Cell Culture-DISEASE-Endocrine/Metabolic System; DISEASE-Other Diseases

5/9/4 (Item 1 from file: 399)
Fulltext available through: STIC Full Text Retrieval Options
CA SEARCH(R)

146093982 **CA:** 146(6)93982t JOURNAL
Application of luminescence imaging in real-time analysis of gene expression
Author: Nakajima, Yoshihiro; Ohmiya, Yoshihiro
Location: National Institute of Advanced Industrial Science and Technology, Japan,
Journal: Baiotekunoroji Janaru
Date: 2006
Volume: 6 **Number:** 2 **Pages:** 230-232
CODEN: BJAAA8
ISSN: 1349-7448
Language: Japanese
Publisher: Yodosha
Section:
CA203000 Biochemical Genetics
CA207XXX Enzymes
CA209XXX Biochemical Methods
Identifiers: review real time imaging luciferase reporter gene transcription assay
Descriptors:
Transcription,genetic... Reporter gene ...
application of luminescence imaging in real-time anal. of gene expression
Imaging ...
fluorescent; application of luminescence imaging in real-time anal. of gene expression
Secretion(process) ...
transcription assocd. with; application of luminescence imaging in real-time anal. of gene expression
CAS Registry Numbers:
61970-00-1P application of luminescence imaging in real-time anal. of gene expression
61969-99-1P of Vargula hilgendorfii; application of luminescence imaging in real-time anal. of gene expression

5/9/5 (Item 2 from file: 399)
CA SEARCH(R)

140265617 **CA:** 140(17)265617x PATENT
Energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Inventor (Author): Ohmiya, Yoshihiro; Ashitaka, Emiko; Ito, Seiji
Location: Japan,

Assignee: National Institute of Advanced Industrial Science and Technology
Patent: PCT International ; WO 200422600 A1 **Date:** 20040318
Application: WO 2003JP11285 (20030904) *JP 2002261229 (20020906) *JP 2002357407 (20021210)
Pages: 57 pp.
CODEN: PIXXD2
Language: Japanese
Patent Classifications:
Class: C07K-019/00A; C07K-014/00B; C12N-015/09B; C12Q-001/66B
Designated Countries: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EC; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NI; NO; NZ; OM; PG; PH; PL; PT; RO; RU; SC; SD; SE; SG; SK; SL; SY; TJ; TM; TN; TR; TT; TZ; UA; UG; US; UZ; VC; VN; YU; ZA; ZM; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ
Designated Regional: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZM; ZW; AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR; HU; IE; IT; LU; MC; NL; PT; RO; SE; SI; SK; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GQ; GW; ML; MR; NE; SN; TD; TG
Section:
CA203002 Biochemical Genetics
CA206XXX General Biochemistry
CA209XXX Biochemical Methods
CA213XXX Mammalian Biochemistry
Identifiers: gene expression monitoring fusion protein energy transfer, Vargula luciferase enhanced yellow fluorescent protein fusion
Descriptors:
Membrane,biological ...
-binding chimeric protein; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
blue fluorescent; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
cyan fluorescent; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
DsRed; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Energy transfer... Fusion proteins(chimeric proteins)... Protein sequences ... Biomarkers(biological responses)...
Drug screening ...
energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Gene ...
expression; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
green fluorescent; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Luminescence... Fluorescence ...
protein emitting; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
red fluorescent; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
secretory, chimeric protein; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
Proteins ...
yellow fluorescent; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool

CAS Registry Numbers:
9014-00-0 61969-99-1 energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
671832-56-7 nucleotide sequence; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
672035-11-9 672035-12-0 672035-15-3 unclaimed nucleotide sequence; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
672035-13-1 672035-14-2 unclaimed protein sequence; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool
672035-16-4 672035-17-5 672035-18-6 671753-57-4 unclaimed sequence; energy transfer donor-acceptor pair fusion protein as in vivo gene expression monitoring tool

```
?  s (luciferase)(n30)(fluorescent)
       179417   LUCIFERASE
      1281397   FLUORESCENT
S6       6569   S (LUCIFERASE)(N30)(FLUORESCENT)

?  s s6 and (vargula or hilgendorfi)
         6569   S6
          618   VARGULA
          711   HILGENDORFI
S7         15   S S6 AND (VARGULA OR HILGENDORFI)

?  rd
>>>W:  Duplicate detection is not supported for File 391.
Records from unsupported files will be retained in the RD set.
S8          9   RD  (UNIQUE ITEMS)

?  d s
Set     Items   Description
S1        444   S AU=((OHMIYA Y?) OR (OHMIYA Y.?) OR (OHMIYA, Y?)) AND LUCIFERASE
S2         61   S S1 AND (VARGULA OR HILGENDORFI)
S3         22   RD  (unique items)
S4          0   S S3 AND (FUSION OF CHIMER? OR HETEROLOGOUS)
S5          5   S S3 AND FLUORESCENT
S6       6569   S (LUCIFERASE)(N30)(FLUORESCENT)
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S7          15   S S6 AND (VARGULA OR HILGENDORFI)
S8           9   RD  (unique items)

?  s s8 not s5
             9   S8
             5   S5
S9           5   S S8 NOT S5

?  t s9/full/all
```

9/9/1 (Item 1 from file: 34)
Fulltext available through: STIC Full Text Retrieval Options
SciSearch(R) Cited Ref Sci

12553942 **Genuine Article#:** 800CN **Number of References:** 109
In vivo bioluminescence imaging for integrated studies of infection

Author: Doyle TC; Burns SM; Contag CH (REPRINT)
Corporate Source: Stanford Univ,Sch Med, MIPS, Clark Ctr,BioX Program,318 Campus Dr,Room E-150/Stanford//CA/94305 (REPRINT); Stanford Univ,Sch Med, MIPS, Clark Ctr,BioX Program,Stanford//CA/94305; Stanford Univ,Sch Med, Dept Pediat, Clark Ctr,BioX Program,Stanford//CA/94305; Stanford Univ,Sch Med, Dept Radiol, Clark Ctr,BioX Program,Stanford//CA/94305; Stanford Univ,Sch Med, Dept Microbiol & Immunol, Clark Ctr,BioX Program,Stanford//CA/94305
Journal: CELLULAR MICROBIOLOGY , 2004 , V 6 , N4 (APR) , P 303-317
ISSN: 1462-5814 **Publication date:** 20040400
Publisher: BLACKWELL PUBLISHING LTD , 9600 GARSINGTON RD, OXFORD OX4 2DG, OXON, ENGLAND
Language: English **Document Type:** REVIEW
Geographic Location: USA
Journal Subject Category: CELL BIOLOGY; MICROBIOLOGY
Abstract: Understanding biological processes in the context of intact organ systems with fine temporal resolution has required the development of imaging strategies that reveal cellular and molecular changes in the living body. Reporter genes that confer optical signatures on a given biological process have been used widely in cell biology and have been used more recently to interrogate biological processes in living animal models of human biology and disease. The use of internal biological sources of light, luciferases, to tag cells, pathogens, and genes has proved to be a versatile tool to provide in vivo indicators that can be detected externally. The application of this technology to the study of animal models of infectious disease has not only provided insights into disease processes, but has also revealed new mechanisms by which pathogens may avoid host defences during infection.
Identifiers-- KeyWord Plus(R): RENILLA-RENIFORMIS **LUCIFERASE**; FLUOROCHROME-LABELED ANTIBODIES; **VARGULA**-HILGENDORFII **LUCIFERASE**; PROTEIN-PROTEIN INTERACTIONS; VISUALIZING GENE-EXPRESSION; GREEN **FLUORESCENT** PROTEIN; SIMPLEX-VIRUS TYPE-1; NF-KAPPA-B; MAMMALIAN-CELLS; FIREFLY **LUCIFERASE**
Cited References:
ALEXANDER G, 2003, V44, P2683, INVEST OPHTH VIS SCI

BAE YM, 1994, V1219, P449, BBA-GENE STRUCT EXPR
BALLOU B, 1998, V22, P251, CANCER DETECT PREV
BALLOU B, 1997, V13, P649, BIOTECHNOL PROGR
BHAUMIK S, 2002, V99, P377, P NATL ACAD SCI USA
BITMANSOUR A, 2002, V100, P4660, BLOOD
BREMER C, 2001, V221, P523, RADIOLOGY
BROWN EB, 2001, V7, P864, NAT MED
BURNS SM, 2001, V9, P71, CONTRIB MICROBIOL
CAO YA, 2004, V101, P221, P NATL ACAD SCI USA
CARLSEN H, 2002, V168, P1441, J IMMUNOL
CHARBONNEAU H, 1985, V24, P6762, BIOCHEMISTRY-US
CHEONG WF, 1990, V26, P2166, IEEE J QUANTUM ELECT
CHRISTENSON MA, 2002, P469, LUMINESCENCE TECHNOL
CONTI E, 1996, V4, P287, STRUCTURE
CONTAG CH, 1995, V18, P593, MOL MICROBIOL
CONTAG CH, 1997, V66, P523, PHOTOCHEM PHOTOBIOL
CONTAG PR, 1998, V4, P245, NAT MED
CONTAG CH, 2002, V4, P235, ANNU REV BIOMED ENG
COOK SH, 2003, V77, P5333, J VIROL
CORMIER MJ, 1989, V49, P509, PHOTOCHEM PHOTOBIOL
DEWET JR, 1985, V82, P7870, P NATL ACAD SCI USA
DEWET JR, 1987, V7, P725, MOL CELL BIOL
DIONNE P, 2002, P539, LUMINESCENCE BIOTECH
FRACKMAN S, 1990, V172, P5767, J BACTERIOL
FRANCIS KP, 2001, V69, P3350, INFECT IMMUN
FRANCIS KP, 2000, V68, P3594, INFECT IMMUN
GAMBHIR SS, 2002, V2, P683, NAT REV CANCER
GREER LF, 2002, V17, P43, LUMINESCENCE
GUPTA RK, 2003, V4, P305, FEMS YEAST RES
HAMBLIN MR, 2003, V187, P1717, J INFECT DIS
HAMBLIN MR, 2002, V75, P51, PHOTOCHEM PHOTOBIOL
HARDY J, 2004, V303, P851, SCIENCE
HART RC, 1979, V18, P2204, BIOCHEMISTRY-US
HASTINGS JW, 1998, P17, GREEN FLUORESCENT PR
HASTINGS JW, 1996, V173, P5, GENE
HUANG Q, 1999, V17, P1033, NAT BIOTECHNOL
INOUYE S, 1985, V82, P3154, P NATL ACAD SCI USA
INOUYE S, 1992, V89, P9584, P NATL ACAD SCI USA
KADURUGAMUWA JL, 2003, V47, P3130, ANTIMICROB AGENTS CH
KADURUGAMUWA JL, 2003, V71, P882, INFECT IMMUN
KUKLIN NA, 2003, V47, P2740, ANTIMICROB AGENTS CH
LI Z, 1993, V1158, P137, BIOCHIM BIOPHYS ACTA
LIPSHUTZ GS, 2001, V3, P284, MOL THER
LIU JX, 1997, V203, P141, GENE
LORENZ WW, 1991, V88, P4438, P NATL ACAD SCI USA
LORENZ WW, 1996, V11, P31, J BIOLUM CHEMILUM
LUKER GD, 2003, V77, P11082, J VIROL
LUKER GD, 2002, V76, P12149, J VIROL
MAEDA Y, 1996, V20, P116, BIOTECHNIQUES

MAHMOOD U, 1999, V213, P866, RADIOLOGY
MANDL S, 2002, V39, P239, J CELL BIOCH S
MATTHEWS JC, 1977, V16, P5217, BIOCHEMISTRY-US
MATTHEWS JC, 1977, V16, P85, BIOCHEMISTRY-US
MAYERHOFER R, 1995, V10, P271, J BIOLUM CHEMILUM
MCCAFFREY AP, 2002, V418, P38, NATURE
MCCAFFREY AP, 2003, V21, P639, NAT BIOTECHNOL
MCCULLERS JA, 2003, V187, P1000, J INFECT DIS
MCELROY WD, 1978, P109, BIOLUMINESCENCE ACTI
MCELROY WD, 1983, V5, P197, J APPL BIOCHEM
MEIGHEN EA, 1991, V55, P123, MICROBIOL REV
MEIGHEN EA, 1993, V7, P1016, FASEB J
MONACK DM, 2003, V199, P231, J EXP MED
NAKAJIMA A, 2001, V107, P1293, J CLIN INVEST
OSHIRO M, 1998, V56, P45, METHOD CELL BIOL
PADERA TP, 2001, V1, P9, MOL IMAGING
PARK HS, 2003, V171, P2532, J IMMUNOL
PARSONS SJW, 2000, V281, P187, ANAL BIOCHEM
PICHLER A, 2003, V101, P1702, P NATL ACAD SCI USA
RANCIS KP, 2002, P517, LUMINESCENCE BIOTECH
RAY P, 2002, V99, P3105, P NATL ACAD SCI USA
REHEMTULLA A, 2002, V1, P43, MOL IMAGING
REHEMTULLA A, 2000, V2, P491, NEOPLASIA
RICE BW, 2001, V6, P432, J BIOMED OPT
ROCCHETTA HL, 2001, V45, P129, ANTIMICROB AGENTS CH
RUDIN M, 2003, V2, P123, NAT REV DRUG DISCOV
STABLES J, 1999, V19, P395, J RECEPT SIGNAL TR R
SWEENEY TJ, 1999, V96, P12044, P NATL ACAD SCI USA
SZALAY AA, 2002, P3, BIOLUMINESCENCE CHEM
SZITTNER R, 1990, V265, P16581, J BIOL CHEM
THOMPSON EM, 1989, V86, P6567, P NATL ACAD SCI USA
THOMPSON EM, 1990, V96, P257, GENE
TROMBERG BJ, 2000, V2, P26, NEOPLASIA
TUCHIN V, 2000, TISSUE OPTICS
TUNG CH, 2000, V60, P4953, CANCER RES
TUNG CH, 1999, V10, P892, BIOCONJUGATE CHEM
VALDIVIA RH, 1997, V5, P360, TRENDS MICROBIOL
VIVIANI VR, 1999, V38, P8271, BIOCHEMISTRY-US
WANG Y, 2001, V264, P578, MOL GEN GENET
WANG Y, 2002, V268, P160, MOL GENET GENOMICS
WARD W, 1985, P321, CHEM BIOLUMINESCENCE
WEISSLEDER R, 1999, V17, P375, NAT BIOTECHNOL
WEISSLEDER R, 2002, V2, P11, NAT REV CANCER
WEISSLEDER R, 2003, V9, P123, NAT MED
WILSON T, 1998, V14, P197, ANNU REV CELL DEV BI
WINSON MK, 1998, V163, P193, FEMS MICROBIOL LETT
WOOD KV, 1989, V244, P700, SCIENCE
WOOD KV, 1995, V62, P662, PHOTOCHEM PHOTOBIOL
WOOD KV, 1989, V4, P31, J BIOLUM CHEMILUM

XU Y, 1999, V96, P151, P NATL ACAD SCI USA
XU Y, 2002, P529, LUMINESCENCE BIOTECH
YANG M, 2001, V98, P2616, P NATL ACAD SCI USA
YANG M, 2000, V97, P1206, P NATL ACAD SCI USA
YANG M, 2000, V97, P12278, P NATL ACAD SCI USA
YANG M, 2002, V99, P3824, P NATL ACAD SCI USA
YU YA, 2003, V377, P964, ANAL BIOANAL CHEM
YU YA, 2002, V268, P169, MOL GENET GENOMICS
ZHANG N, 2003, V170, P6307, J IMMUNOL
ZHAO M, 2001, V98, P9814, P NATL ACAD SCI USA

12458727 **Genuine Article#:** 766MF **Number of References:** 37

Cloning and expression of cDNA for a luciferase from the marine copepod Metridia longa - A novel secreted bioluminescent reporter enzyme

Author: Markova SV; Golz S; Frank LA; Kalthof B; Vysotski ES (REPRINT)
Corporate Source: Russian Acad Sci,Siberian Branch, Inst Biophys, Photobiol Lab,Krasnoyarsk 660036//Russia/ (REPRINT); Russian Acad Sci,Siberian Branch, Inst Biophys, Photobiol Lab,Krasnoyarsk 660036//Russia/; Bayer AG,Pharma Res Mol Screening Technol,D-42096 Wuppertal//Germany/
Journal: JOURNAL OF BIOLOGICAL CHEMISTRY , 2004 , V 279 , N5 (JAN 30) , P 3212-3217
ISSN: 0021-9258 **Publication date:** 20040130
Publisher: AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC , 9650 ROCKVILLE PIKE, BETHESDA, MD 20814-3996 USA
Language: English **Document Type:** ARTICLE
Geographic Location: Russia; Germany
Journal Subject Category: BIOCHEMISTRY & MOLECULAR BIOLOGY
Abstract: Metridia longa is a marine copepod from which a blue bioluminescence originates as a secretion from epidermal glands in response to various stimuli. We demonstrate that Metridia luciferase is specific for coelenterazine to produce blue light (lambda(max)=480 nm). Using an expression cDNA library and functional screening, we cloned and sequenced the cDNA encoding the Metridia luciferase. The cDNA is an 897-bp fragment with a 656-bp open reading frame, which encodes a 219-amino acid polypeptide with a molecular weight of 23,885. The polypeptide contains an N-terminal signal peptide of 17 amino acid residues for secretion. On expression of the Metridia luciferase gene in mammalian Chinese hamster ovary cells the luciferase is detected in the culture medium confirming the existence of a naturally occurring signal peptide for secretion in the cloned luciferase. The novel secreted luciferase was tested in a practical assay application in which the activity of A2a and NPY2 G-protein-coupled receptors was detected. These results clearly suggest that the secreted Metridia luciferase is well suited as a reporter for monitoring gene expression and, in particular, for the development of novel ultra-high throughput screening technologies.
Identifiers-- KeyWord Plus(R): **VARGULA**-HILGENDORFII **LUCIFERASE**; GREEN **FLUORESCENT** PROTEIN; GENE-EXPRESSION; FIREFLY **LUCIFERASE**; PROMOTER ACTIVITY; MAMMALIAN-CELLS; RECEPTOR; CANCER; PHOTOPROTEINS; LUMINESCENCE

Cited References:

ANDO S, 2002, V193, P121, MOL CELL ENDOCRINOL
BEVIS BJ, 2002, V20, P83, NAT BIOTECHNOL
BHAUMIK S, 2002, V99, P377, P NATL ACAD SCI USA

BI JX, 2002, V93, P231, J BIOTECHNOL
BROUSSARD DR, 2002, V76, P2087, J VIROL
CAMPBELL AK, 1990, V104, P219, MAR BIOL
CHALFIE M, 1994, V263, P802, SCIENCE
CHOMCZYNSKI P, 1987, V162, P156, ANAL BIOCHEM
CLARKE GL, 1962, V42, P541, J MAR BIOL ASSOC UK
DUISIT G, 2002, V6, P446, MOL THER
EVSTIGNEEV PV, 1990, BIOLUMINESCENCE MARI
GANDELMAN O, 1994, V9, P363, J BIOLUM CHEMILUM
HOUGH RB, 2002, V99, P8145, P NATL ACAD SCI USA
ILLARIONOV BA, 1992, V326, P911, DOKL AKAD NAUK
INOUYE S, 2000, V481, P19, FEBS LETT
INOUYE S, 1992, V89, P9584, P NATL ACAD SCI USA
JOHNSON GL, 1989, V10, P317, ENDOCR REV
JOHNSON CH, 1995, V269, P1863, SCIENCE
KONDO T, 1993, V90, P5672, P NATL ACAD SCI USA
KOSTROUCHOVA M, 2002, V99, P9254, P NATL ACAD SCI USA
LANGER I, 2001, V30, P229, CELL CALCIUM
LEMBERT N, 1995, V305, P929, BIOCHEM J 3
LIU JX, 2000, V15, P45, LUMINESCENCE
LIU Y, 2000, V44, P250, PLASMID
LIU S, 2001, V87, P1, J BIOTECHNOL
LORENZ WW, 1991, V88, P4438, P NATL ACAD SCI USA
MARKOVA SV, 2002, V41, P2227, BIOCHEMISTRY-US
MILLAR AJ, 1992, V4, P1075, PLANT CELL
RADFORD JC, 2002, V277, P38810, J BIOL CHEM
RONEN M, 2002, V99, P10555, P NATL ACAD SCI USA
TANAHASHI Y, 2001, V289, P260, ANAL BIOCHEM
THOMPSON EM, 1989, V86, P6567, P NATL ACAD SCI USA
THOMPSON EM, 1990, V96, P257, GENE
THOMPSON EM, 1995, V92, P1317, P NATL ACAD SCI USA
TSUJI FI, 1995, V62, P657, PHOTOCHEM PHOTOBIOL
YOON K, 2000, V162, P211, MOL CELL ENDOCRINOL
YOSHIDA R, 1998, V242, P659, BIOCHEM BIOPH RES CO

12402598 **Genuine Article#:** 762YC **Number of References:** 94

Improved reporter gene assays used to identify ligands acting on orphan seven-transmembrane receptors

Author: Kotarsky K; Nilsson NE; Olde B; Owman C (REPRINT)
Corporate Source: Wallenberg Neurosci Ctr,Dept Physiol Sci, Div Mol Neurobiol,BMC A12/S-22184 Lund//Sweden/ (REPRINT); Wallenberg Neurosci Ctr,Dept Physiol Sci, Div Mol Neurobiol,S-22184 Lund//Sweden/
Journal: PHARMACOLOGY & TOXICOLOGY , 2003 , V 93 , N6 (DEC) , P 249-258
ISSN: 0901-9928 **Publication date:** 20031200
Publisher: BLACKWELL MUNKSGAARD , 35 NORRE SOGADE, PO BOX 2148, DK-1016 COPENHAGEN, DENMARK
Language: English **Document Type:** REVIEW
Geographic Location: Sweden
Journal Subject Category: PHARMACOLOGY & PHARMACY; TOXICOLOGY
Abstract: Seven-transmembrane G-protein-coupled receptors play a central role in physiology by facilitating cell communication through recognition of a wide range of ligands. Even more important, they represent important drug targets. Unfortunately, for many of these receptors the endogenous ligands, and hence their functions, remain to be identified. These receptors are referred to as "orphan" receptors. A pre-requisite for the identification of ligands activating orphan receptors is powerful assay systems. Until now, reporter gene assays have not been in common use in this process. Here, we summarize our development of improved reporter gene assays. We optimized reporter gene assays in respect of (i) the promoter region of the construct, (ii) the reporter enzyme used, (iii) and the assay procedure. Furthermore, an unique fluorescence-based clone selection step was introduced, allowing rapid selection of the most sensitive reporter cell clones when establishing stable reporter cell lines. Mathematical formulae are provided to enable a simple and reliable comparison between different cell lines, when tested with a compound of interest. The resulting reporter cell lines responded in a very sensitive way to the stimulation of various test receptors. The reporter system was termed HighTRACE(R) (high-throughput reporter assay with clone election). Its high assay quality makes it suitable as a primary screening tool. Ligands for two recently unknown 7TM receptors were identified using the HighTRACE(R) system i.e., two cell surface free fatty acid receptors, GPR40 (FFA(1)R) and GPR43 (FFA(2)R). The identification was accomplished using a reverse pharmacology approach.
Identifiers-- KeyWord Plus(R): PROTEIN-COUPLED RECEPTOR; GREEN-**FLUORESCENT** PROTEIN; CHAIN FATTY-ACIDS; **VARGULA**-HILGENDORFII **LUCIFERASE**; LEUKOTRIENE B-4 RECEPTOR; NEUROMEDIN-U RECEPTORS; CENTRAL-NERVOUS-SYSTEM; FUNCTIONAL-CHARACTERIZATION; NATURAL LIGANDS; MAMMALIAN-CELLS
Cited References:

US 5854004, 1998, CZERNILOFSKY AP
AN SZ, 1997, V231, P619, BIOCHEM BIOPH RES CO
ARCHER E, 2003, V24, P36, TRENDS PHARMACOL SCI
BACHNER D, 1999, V457, P522, FEBS LETT
BARAK LS, 1997, V272, P27497, J BIOL CHEM
BARGMANN CI, 1998, V282, P2028, SCIENCE
BOCKAERT J, 1999, V18, P1723, EMBO J
BOIE Y, 1999, V380, P203, EUR J PHARMACOL
BOSS V, 1996, V271, P10429, J BIOL CHEM
BRISCOE CP, 2003, V278, P11303, J BIOL CHEM
BROWN AJ, 2003, V278, P11312, J BIOL CHEM
BUTTON D, 1993, V14, P663, CELL CALCIUM
CANTELLO BCC, 1994, V37, P3977, J MED CHEM
CHAMBERS JK, 2000, V275, P10767, J BIOL CHEM
CHEN W, 1995, V226, P349, ANAL BIOCHEM
CIVELLI O, 2001, V24, P230, TRENDS NEUROSCI
CIVELLI O, 1998, V12, P163, CRIT REV NEUROBIOL

CIVELLI O, 1999, V848, P63, BRAIN RES
CIVELLI O, 1997, V17, P545, J RECEPT SIGNAL TR R
CODY CW, 1993, V32, P1212, BIOCHEMISTRY-US
CRAIG FF, 1991, V276, P637, BIOCHEM J
EDELMAN GM, 2000, V97, P3038, P NATL ACAD SCI USA
FIERING SN, 1991, V12, P291, CYTOMETRY
FITZGERALD LR, 1999, V275, P54, ANAL BIOCHEM
FUJII R, 2000, V275, P21068, J BIOL CHEM
FUNES S, 2002, V23, P1607, PEPTIDES
GHOSE S, 1999, V274, P12848, J BIOL CHEM
GOETZ AS, 2000, V5, P377, J BIOMOL SCREEN
GONZALEZ JE, 1998, V9, P624, CURR OPIN BIOTECH
GREER LF, 2002, V17, P43, LUMINESCENCE
HEDRICK JA, 2000, V58, P870, MOL PHARMACOL
HEISE CE, 2000, V275, P30531, J BIOL CHEM
HILL SJ, 2001, V1, P526, CURR OPIN PHARMACOL
HOSOYA M, 2000, V275, P29528, J BIOL CHEM
HOWARD AD, 2001, V22, P132, TRENDS PHARMACOL SCI
HOWARD AD, 2000, V406, P70, NATURE
IM DS, 2002, V90, P101, JPN J PHARMACOL
ITOH Y, 2003, V422, P173, NATURE
JOHNSTON PA, 2002, V7, P353, DRUG DISCOV TODAY
KAIN SR, 1999, V4, P304, DRUG DISCOV TODAY
KAWAMATA Y, 2003, V278, P9435, J BIOL CHEM
KNAPP T, 2003, V51, P68, CYTOM PART A A
KOJIMA M, 2000, V276, P435, BIOCHEM BIOPH RES CO
KOTANI M, 2001, V276, P34631, J BIOL CHEM
KOTARSKY K, 2003, V316, P208, ANAL BIOCHEM
KOTARSKY K, 2003, V301, P406, BIOCHEM BIOPH RES CO
KOTARSKY K, 2001, V288, P209, ANAL BIOCHEM
KUNAPULI P, 2003, V314, P160, ANAL BIOCHEM
LEFKOWITZ RJ, 2000, V2, P133, NAT CELL BIOL
LENKEI Z, 2000, V48, P1553, J HISTOCHEM CYTOCHEM
LEPOUL E, 2003, V278, P25481, J BIOL CHEM
LIN KD, 2002, V277, P40789, J BIOL CHEM
LIU JX, 1997, V203, P141, GENE
LIU JX, 1999, V237, P153, GENE
MIYAWAKI A, 1997, V388, P882, NATURE
MOON KY, 2001, V292, P17, ANAL BIOCHEM
NAGAI T, 2001, V98, P3197, P NATL ACAD SCI USA
NAYLOR LH, 1999, V58, P749, BIOCHEM PHARMACOL
NIEDERNBERG A, 2003, V15, P435, CELL SIGNAL
NILSSON NE, 2003, V303, P1047, BIOCHEM BIOPH RES CO
ODA T, 2000, V275, P36781, J BIOL CHEM
OWENS GC, 2001, V98, P1471, P NATL ACAD SCI USA
PALCZEWSKI K, 2000, V289, P739, SCIENCE
PATERLINI MG, 2002, V83, P3012, BIOPHYS J
PELLETIER S, 2003, V23, P1316, MOL CELL BIOL
PIERCE KL, 2002, V3, P639, NAT REV MOL CELL BIO

PRASHER DC, 1992, V111, P229, GENE
RADDATZ R, 2000, V275, P32452, J BIOL CHEM
REGINATO MJ, 1998, V273, P32679, J BIOL CHEM
SAWZDARGO M, 1997, V239, P543, BIOCHEM BIOPH RES CO
SCHONEBERG T, 2002, V144, P143, REV PHYSIOL BIOCH P
SENGA T, 2003, V101, P1185, BLOOD
SHAN LX, 2000, V275, P39482, J BIOL CHEM
SISTA P, 1994, V141, P129, MOL CELL BIOCHEM
STRATOWA C, 1995, V15, P617, J RECEPT SIGNAL TR R
SUZUKI N, 2003, V100, P733, P NATL ACAD SCI USA
SZEKERES PG, 2002, V8, P297, RECEPTOR CHANNEL
SZEKERES PG, 2000, V275, P20247, J BIOL CHEM
TANAHASHI H, 1990, V96, P249, GENE
TANAHASHI Y, 2001, V289, P260, ANAL BIOCHEM
THOMPSON EM, 1990, V96, P257, GENE
TRYSELIUS Y, 2000, V274, P377, BIOCHEM BIOPH RES CO
VASSILATIS DK, 2003, V100, P4903, P NATL ACAD SCI USA
VERHAEGEN M, 2002, V74, P4378, ANAL CHEM
VORABERGER G, 1991, V147, P2777, J IMMUNOL
WANG SK, 2001, V276, P34664, J BIOL CHEM
WEYER U, 1993, V1, P193, RECEPTOR CHANNEL
WILSON S, 1998, V125, P1387, BRIT J PHARMACOL
YANG TT, 1997, V23, P1110, BIOTECHNIQUES
YE RD, 2001, V70, P839, J LEUKOCYTE BIOL
YOKOMIZO T, 1997, V387, P620, NATURE
ZHANG JH, 1999, V4, P67, J BIOMOL SCREEN
ZHU Y, 2001, V59, P434, MOL PHARMACOL
ZLOKARNIK G, 1998, V279, P84, SCIENCE

9/9/4 (Item 1 from file: 357)

0216211 **DBA Accession No.:** 97-11332 **PATENT**
Use of bioluminescence generating systems
- transgenic fish construction by luciferase gene expression

Author: Bryan B J
Corporate Source: Beverly Hills, CA, USA.
Patent Assignee: Bryan B J 1997
Patent Number: WO 9729319 **Patent Date:** 970814 **WPI Accession No.:** 97-415441 (9738)
Priority Application Number: US 757046 **Application Date:** 961125
National Application Number: WO 97US1699 **Application Date:** 970203
Language: English
Abstract: New uses for bioluminescence generating systems are claimed. The uses include novelty items such as toys, paints, textiles, dentifrices, soaps, foods, ice, fountains and transgenic fish. Also new are: a method for

producing an isolated vacuole containing a luciferase from Aequorea, **Vargula**, Renilla, Obelin, Porichthys, Aristostomias, Odontosyllis, Oplophorus, firefly (EC-1.13.12.7, Photinus pyralis) or bacterium (EC-1.14.14.3, Vibrio harveyi) or, which involves expressing DNA encoding **luciferase** in a host cell and isolating the intact vacuoles from the host cell; and a transgenic fish containing DNA encoding

luciferase. Green **fluorescent** protein, blue **fluorescent** protein, luciferin or phycobiliprotein may be used in fluorescence. (214pp)
E.C. Numbers: 1.13.12.7; 1.14.14.3
Descriptors: transgenic fish construction, **luciferase** gene expression, luminescence enzyme EC-1.14.14.3 EC- gene transfer transgenic animal cloning green **fluorescent** protein blue **fluorescent** protein phycobiliprotein luciferin (Vol.16, No.22)
Section: AGRICULTURE-Agriculture, Other; GENETIC ENGINEERING AND FERMENTATION- Nucleic Acid Technology (E5,A1)

9/9/5 (Item 1 from file: 399)
CA SEARCH(R)

135253492 **CA:** 135(18)253492m PATENT
Cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Inventor (Author): Bryan, Bruce J.; Szent-Gyorgyi, Christopher; Szczepaniak, William
Location: USA
Assignee: Prolume, Ltd.
Patent: PCT International ; WO 200168824 A2 **Date:** 20010920
Application: WO 2001US8277 (20010315) *US PV189691 (20000315)
Pages: 175 pp.
CODEN: PIXXD2
Language: English
Patent Classifications:
Class: C12N-009/02A; C07K-014/435B; C12N-015/12B; C12N-015/10B; C12N-015/11B; C12N-015/66B; A61K-049/00B; A01H-005/00B; A01K-067/027B; A61K-038/17B; F41C-003/00B; F21S-010/00B; A23L-001/00B; C12G-001/00B; C07K-016/18B; C12N-005/10B
Designated Countries: AE; AG; AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CO; CR; CU; CZ; DE; DK; DM; DZ; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM
Designated Regional: GH; GM; KE; LS; MW; MZ; SD; SL; SZ; TZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG
Section:
CA206003 General Biochemistry
CA203XXX Biochemical Genetics
CA207XXX Enzymes
CA209XXX Biochemical Methods
CA212XXX Nonmammalian Biochemistry
CA262XXX Essential Oils and Cosmetics

Identifiers: Renilla green fluorescent protein luciferase cDNA sequence, bioluminescence diagnosis BRET biosensor microelectronic device GFP luciferase

Descriptors:

Cnidarian(Cnidaria)... Ctenophora(phylum)... Mollusk(Mollusca)... Crustacean(Crustacea)... Fish...
Annelid(Annelida)... Earthworm... Firefly ... Mnemiopsis... Beroe ovata... Aequorea... Obelia... Vargula... Pelagia ...
Pholas... Pachystomias... Porichthys... Cypridina... Aristostomias... Malacosteus... Gonadostomias... Watasenia...
Halistaura... Vampyroteuthis infernalis... Glyphus... Mycotophidae... Vinciguerria... Howella... Florenciella...
Chauliodus... Melanocetus... Sea pen... Chiroteuthis... Eucleoteuthis... Onychoteuthis... Watasenia... Sepiidae ...

bioluminescence generating systems from; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generati

Resonant energy transfer ...

BRET system; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Wine ...

champagne; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Protein sequences... Molecular cloning... cDNA sequences... Renilla... Renilla mulleri... Gaussia... Pleuromamma...
Renilla reniformis... Probes(nucleic acid)... Primers(nucleic acid)... Plasmid vectors...
Luminescence,bioluminescence... Sepiolina... Oplophorus... Acanthophyra... Sergestes... Gnathophausia...
Argyropelecus... Yarrella... Diaphus... Neoscopelus... Reporter gene... Toys... Food additives... Textiles... Paper ...
Clothing... Bubbles... Balloons... Cosmetics... Bath preparations... Dentifrices... Mouthwashes... Soaps...
Gelatins,properties... Beer... Wine ... Milk... Beverages... Antibodies... Biosensors... Microelectronic devices...
Transgene ...

cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Bacteria(Eubacteria)... Yeast... Fungi... Plant cell... Insect(Insecta)... Animal cell ...

cloning host; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Fusion proteins(chimeric proteins) ...

contg. luciferase and GFP; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Confectionery ...

frosting; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Bakery products ...

frostings; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Cosmetics ...

gels; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Self-association ...

GFP mutein with reduced multimerization; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generati

Proteins,specific or class ...

green fluorescent; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Medical goods ...

hygienic materials; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

Conformational transition ...
in BRET system; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Optical detectors... Electric circuits ...
in microelectronic device; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Pigments,biological ...
luciferins; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Microanalysis... Analytical apparatus ...
microarray, in microelectronic device; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating
Antibodies ...
monoclonal; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Plant(Embryophyta) ...
ornamental, transgenic; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
Quaternary structure ...
protein, GFP mutein with reduced multimerization; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence
Animal... Plant(Embryophyta)... Monkey... Worm... Rodent... Goat... Swine ... Cattle... Sheep... Horse(Equus caballus)... Angiosperm(Magnoliophyta) ... Orchid(Orchidaceae) ...
transgenic; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

CAS Registry Numbers:

61869-41-8P 9014-00-0P cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
245327-69-9DP 245327-70-2DP 362069-46-3DP 362069-45-2DP subfragments and variants are claimed, amino acid sequence; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
245327-51-9D 245327-65-5D 337895-35-9D 361407-14-9D 361407-15-0D 362069-44-1D subfragments and variants are claimed, nucleotide sequence; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
245350-01-0 245350-10-1 122495-75-4 245350-15-6 192733-37-2 105732-60-3 245350-21-4 245350-22-5 160025-97-8 160025-98-9 160025-99-0 160026-00-6 245350-25-8 157514-19-7 245327-41-7 245350-31-6 361407-16-1 245327-42-8 245327-43-9 unclaimed nucleotide sequence; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems
245327-67-7 245350-33-8 340051-45-8 362070-70-0 362070-71-1 194370-56-4 362070-72-2 274948-18-4 362070-73-3 362070-74-4 362070-75-5 362070-76-6 251925-39-0 362070-77-7 unclaimed protein sequence; cloning and sequencing of Renilla green fluorescent protein and luciferase and their use in diagnostics, high throughput screening and bioluminescence generating systems

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